CH 293-16

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ecology and environment, inc.
223 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60606, TEL. 312-663-9415
International Specialists in the Environmental Sciences

DATE: October 26, 1982

TO: Greg Kulma, Remedial Response Section

FROM: Joe Petrilli, Field Investigation Team Leader Joe

SUBJECT: Attached memorandum from Ron St. John to Joe Petrilli

RE: Comments made by Greg Kulma and Kevin C. Garrahan on the Hydrogeologic and Extent of Contamination Study for Chemical Recovery Systems

After you review the attached memorandum, I would suggest a meeting among the three of us to discuss Mr. St. John's response in more detail. This will also give us an opportunity to talk about the peer review process, and how to implement report modifications.

Please contact me when you have finifshed your review of the FIT comments and are ready to discuss them.

cc: Ron St. John

TO: Joe Petrilli, FITL

FROM: Ron St. John, author of the CRS report Ecology & Environment, Inc.

SUBJECT: Rebuttal to comments made by Gregg Kulma and Kevin G. Garrahan on the Hydrogeologic and Extent of Contamination Study for Chemical Recovery Systems.

DATE: October 15, 1982

I have read the comments made by Mr. Kulma and have the following reply to them:

1) I don't understand this comment as a review of Table 3 certainly shows adequate evidence of groundwater contamination.

2) The groundwater elevation at completion, of 694.29, is incorrect. No elevation should have been shown, as depicted in cross-section A-A' on Plate 2 groundwater was not encountered.

3) I agree.

4) I agree.

My reply to Mr. Garrahan's comments are:

page 2) The description of the sewer line on page four, should read: "bell and spigot" rather than "bell and spicket." On the other hand, the explanation of the sewers' function seems sufficient.

page 5) He needs to read these statements more carefully; they are correct. On page four, in the last sentence of the first paragraph under Site Geology it reads: twenty feet of <u>fill</u> thickness. On page twenty-five it states: twenty-eight feet of <u>unconsolidated materials</u>.

page 16) Pertaining to comments on my overestimation of precipitation infiltration: Mr. Garrahan first tells me that his computer model estimate of thirty-five to forty percent is more accurate than my fifty percent, then, he contradicts himself by saying that his figure may increase due to sub-surface lateral entry of precipitation from off-site areas.

Pertaining to his comments on using the entire stream bottom as the area perpendicular to flow, in the flow rate calculation:

1) The example figure he gives does not resemble the conditions at the site.

2) The Black River is not the major discharge area for groundwater.

3) Besides these facts, the thickness that would be used to calculate the flow rate through the fill would be the saturated thickness <u>not</u> the maximum thickness of fill (28 feet).

If needed, site specific examples can be given.

page 18) These are valid additions.

RSJ: rp

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

OCT 12 1982

DATE: 10/8/82

SUBJECT: Review Comments Chemical Recovery Systems, Inc.
Hydrogeologic and Extent of Contamination Study

FROM: Gregg Kulma
Remedial Response Section I

TO: Rod Bloese
Ecology & Environment, Inc.

I have attached a copy of review comments on the subject report. In accordance with the peer review process, these comments must be addressed before this report can be released to the public. After you have had a chance to review these comments, it probably will be appropriate to have a discussion about how to address them. Changes will either have to be made in the report or justify reasons for not making changes.

Attachment

cc: Marian Neudel
Mike Kosakowski, w/attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: SEP 29 1982

OCT 4 1982

SUBJECT: Review Comments Chemical Recovery Systems, Incorporated Hydrogeologic and Extent of Contamination Study

FROM: Gregg Kulma, On-Scene Coordinator
Remedial Response Section I

TO: Marian Neudel, General Attorney
Water Enforcement

I have reviewed the subject report and have the following comments:

1. Page 2, Paragraph 4 and page 4, Paragraph 1 - statements are made that groundwater is contaminated without any supporting evidence;

2. Page 5, Paragraph 3, Sentence 3 - sample 5 is below the water table. This is based on the drilling log for boring number B-8;

3. Page 18, Paragraph 1, Last sentence - I suggest that the phrase "by a considerable margin" be deleted since there are no calculations which establish what the flow rates are;

4. Page 25, Conclusion 6 - the word significant should be deleted for the same reasoning in comment 3.

I have also attached a copy of the review comments from Kevin Garrahan.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Peer Review of E & E Hydrogeological Study of Chemical Recovery Systems - Elyria, Ohio

FROM: Kevin G. Garrahan, Environmental Engineer
Compliance Branch
KGG

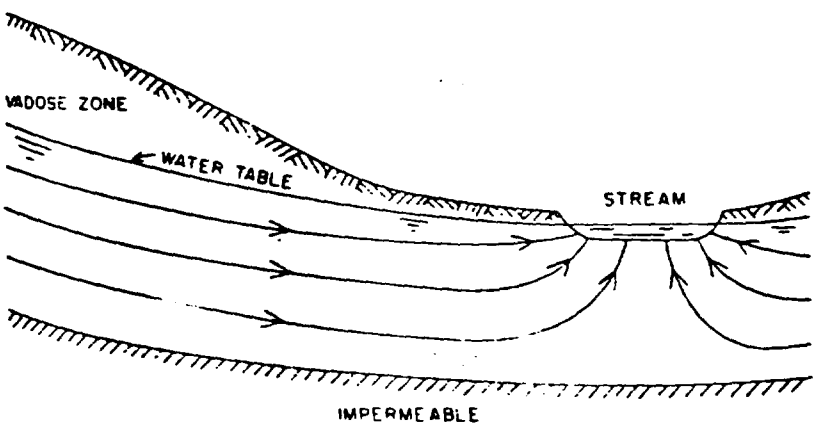
TO: Michael Kosakowski, Acting Chief
Compliance Branch

I have reviewed the E & E report and offer the following comments:

Page	Comment
2	The description of the "sewer line" beneath the site is confusing. Is it a bell and spigot storm drain to collect surface storm-water run-off from Locust Street? If so, call it such.
5	The maximum thickness of unconsolidated fill is stated to be 20 feet. On page 25, conclusion #2, the maximum thickness is stated as 28
16	The calculations of leachate generation is based on two simplifying assumptions: (1) 50% of precipitation infiltrates and leaches, (2) contaminated site area of 2 acres. The 50% proportion appears high. Hydrologic simulation using the Perrier & Gibson computer model estimates percolation at about 35-40 percent. The calculation also ~~ignores~~ the sub-surface lateral entry of precipittion from off-site areas.

precipitation

16 Calculations for groundwater flow are based on an assigned permeability value and the river depth of eight feet. The river depth should not be used to calculate the cross-section area normal to the flow since the flow lines converge to the sides and bottom of the stream (see sketch below).



Since the characteristics of the underlying sandstone aquifer are not known, then perhaps it would be best to calculate the flow of groundwater through the layer of unconsolidated fill. In this case, the maximum thichness of fill (28 feet) would be used in Darcy's Equation. Computation of the equation would yield the maximum flow of contaminated groundwater through the site.

18 Additional causes for the large difference between leachate generation and the flow of groundwater are: (1) the estimated proportion of infiltrating precipitation (50)% is too high, (2) seasonal variations of groundwater flow are not accounted for.

Plates The plates should show the flow direction of the Black River. Legends should also be labelled.

c.c. Leon Acierto, Region V ✓